

REMARKS

The specification (abstract) has been objected to in the Office Action. A replacement abstract is hereby provided. No new matter has been added.

Claims 10-14, 17 and 18 have been rejected under 35 USC 102(b) as anticipated by Khoyi. The rejection is respectively traversed.

The invention discloses a circuit arrangement and a corresponding process for data conversion in a processor. A data conversion to be carried out in a processor is carried out in an object-oriented manner before an arithmetic or logical operation, in each case on the basis of a data type specification belonging to the object.

In processors or microprocessors, data type conversion is effected by program sequences before an arithmetic or logical operation with different data types. The data type conversion by program sequences is, however, disadvantageous since it reduces the processing speed of a processor or microprocessor. Additionally, this type of data conversion has the disadvantage that the bus system of the processor is loaded by the operation code required for the data conversion. Along with the addressed data type conversion, object-oriented programming languages are used to solve special problems. A data type conversion can also be achieved by an object-oriented command structure. The object-oriented command structure brings with it, however, the disadvantage of an enlargement of the programming code since each command for each combination of data types must be stored in the memory. An enlargement of the programming code also has a reduction of the processing speed as a consequence.

In Khoyi, a process is disclosed in which languages can be translated from one language into another (for example, German into English). This system comprises object managers, which recognize each language respectively (German / English) and translate it into a desired "target" language. The known process has, however, nothing in common with the invention. That is, the fact that processors for translation are also mandatory has nothing to do with the invention.

Two examples (attached hereto) help clarify the differences between the claimed invention and the applied reference:

In the first example, variables are added by a microprocessor with 8086 code (for example, Intel Pentium or AMD Athion) via subprograms, and the result is stored in target variables. All the variables have different types (for example, byte and word). Since the op-code of an 8086 type is dependent (see op-code syntax), type-appropriate subprograms must be called.

In example 2, the same functions are carried out by an object-oriented microprocessor. Since all the source and target variables are identified via their object type (for example, byte and word), the conversion of the object types is carried automatically in the microprocessor and only one sub-program is required.

In Khoyi, an arrangement is disclosed as to how processors are used to solve a problem in the business world. In the present invention, processing or management is described of how, for example, images or presentations can be exchanged between persons from different companies. This conversation can, for example, be done via data processing, such as, for example, PCs, even in different languages such as German or English.

Since the recited structure and method are not disclosed by the applied reference, claims 10 and 17 are patentable. All other claims depend therefrom and are similarly patentable.

Claims 15, 16, 19 and 20 have been rejected under 35 USC 103(a) as unpatentable over Khoyi in view of Microsoft Press Computer Dictionary (Third Edition). The rejection is respectfully traversed for the same reasons presented in the arguments above.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 449122031600. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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EXAMPLE 1

Beispiel 1: Code µProzessor 8086

Opcode Syntax

```
88H  mov  m8, r8
89H  mov  m16, r16
8AH  mov  r8, m8
8BH  mov  r16, m16
00H  add  r8, r8
01H  add  r16, r16
```

```
ByteSource1  db  12H
ByteSource2  db  23H
ByteResult   db  ?
```

```
WordSource1  dw  1230H
WordSource2  dw  3450H
WordResult   dw  ?
```

```
mov al,ByteSource1
mov bl,ByteSource2
mov bp,offset ByteResult
call Byte+ByteToByte
```

```
mov al,ByteSource1
mov bl,ByteSource2
mov bp,offset WordResult
call Byte+ByteToWord
```

```
mov al,ByteSource1
mov bx,WordSource2
mov bp,offset WordResult
call Byte+WordToWord
```

```
mov ax,WordSource1
mov bx,WordSource2
mov bp,offset WordResult
call Word+WordToWord
```

```
Byte+ByteToByte:
add al,bl
mov byte ptr [bp],al
ret
```

```
Byte+ByteToWord:
mov ah,0
mov bh,0
add ax,bx
mov word ptr [bp],ax
ret
```

```
Byte+WordToWord:
mov ah,0
add ax,bx
mov word ptr [bp],ax
ret
```

```
Word+WordToWord:
add ax,bx
mov word ptr [bp],ax
ret
```

EXAMPLE 2

Beispiel 2: Objektorientierter μ Prozessor

Opcode Syntax

```
No1  mov  Reg, TypeData
No2  mov  TypeData, Reg
No3  add   Reg, Reg
```

```
ByteSource1  db    12H
ByteSource2  db    23H
ByteResult   db    ?
```

```
WordSource1  dw    1230H
WordSource2  dw    3450H
WordResult   dw    ?
```

```
mov Reg1,ByteSource1
mov Reg2,ByteSource2
mov Reg3,TypeAddress ByteResult
call AddToResult
```

```
mov Reg1,ByteSource1
mov Reg2,ByteSource2
mov Reg3,TypeAddress WordResult
call AddToResult
```

```
mov Reg1,ByteSource1
mov Reg2,WordSource2
mov Reg3,TypeAddress WordResult
call AddToResult
```

```
mov Reg1,WordSource1
mov Reg2,WordSource2
mov Reg3,TypeAddress WordResult
call AddToResult
```

```
AddToResult:
    add Reg1,Reg2
    mov TypeAddress Reg3,Reg1
    ret
```